

Title: Modified Barley  $\alpha$ -Glucosidase  
Inventor(s): Henson/Muslin/Clark  
Application No.:  
Docket Number: 960296.97486

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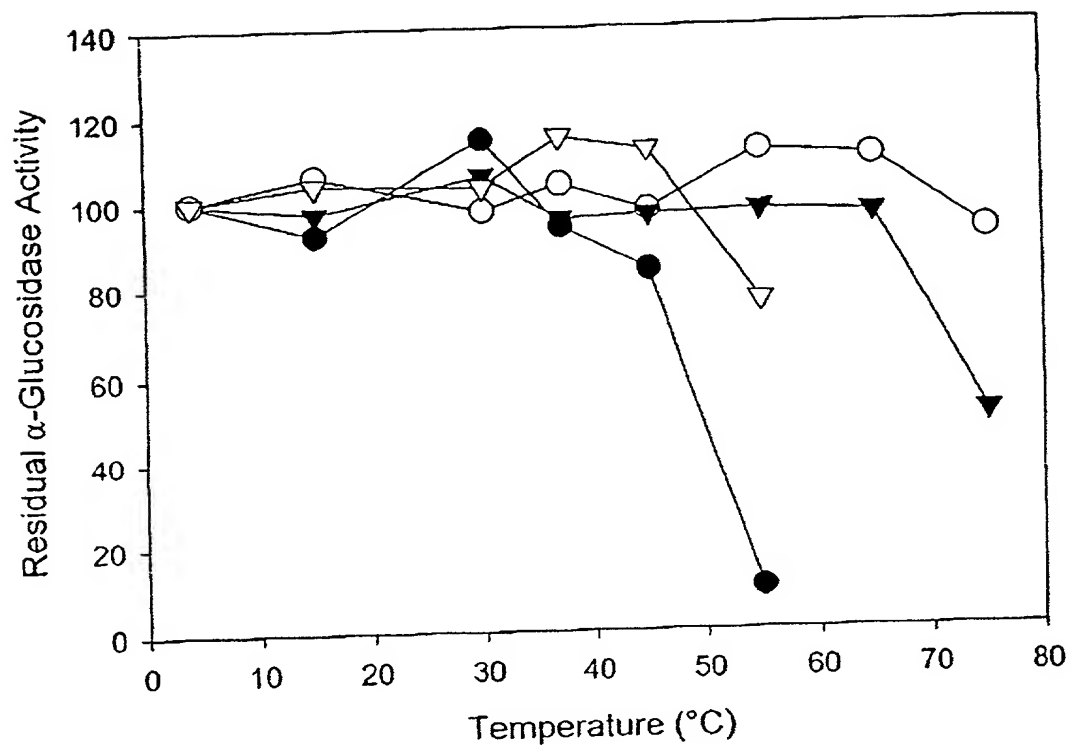


FIG 1

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BARLEY	MA-----TVGV-----LILCLCLCLFAPRLCSSKEEGPLAAR---	(32)
S. BEET	Me-----rskipryicptlavvLpLvLCmvvegattSKnchqgeAigy	(44)
SPINACH	MkkkipsialGi-----LLVfLLqyLVAgistSendpegvgy---	(38)
ARABID.	Me-----slhwfpnif----ivvvvffeLxssqvvlceEEstvvgy---	(37)
BARLEY	-----TVLAVAVTMEG-----ALRAEAATGGRSSTG-----DVQRLAVY	(66)
S. BEET	yqvknakvdnstgkal-----tallqlirnsppvyp-----DihfLsft	(83)
SPINACH	-----gykvksVkvde-----gtRrsLcalpqlvknssvygpdilQLLat	(78)
ARABID.	-----gyvvreVgvdnrgvltakldlikpsvysp-----DiksLnih	(76)
BARLEY	ASLETDSRLRVRIITDADHPRWEVPQDIIPRPAPGD-----VLHDAPPA	(109)
S. BEET	ASfEeDdtLRiRfTDAnnrrWE.FnevlPRFPpppsppplaelqhlpxPi	(133)
SPINACH	ASLEendRLRVRIITDAKlrrWEipdnIlhrhqPpp-----ppphals	(121)
ARABID.	VSLETseRLRiRiITDssqqrWEiPervIPRagnhs-----prifstee	(119)
BARLEY	S-----S--APLQCRVLSFAGSDLVLTU-H-ASPFRFTVSRSTGDT	(147)
S. BEET	p-----q--nqptttVLShphSDlafTlfH-ttFFgFTiYrkSThdv	(172)
SPINACH	lyrtllspt--tnxrkillLshpnsDLt fel-inttPFgFTiSRKSThdv	(168)
ARABID.	d-----ggnsPennfladPssdlvftlh-n-ttFFgFsVSRSeGDi	(159)
BARLEY	LFDTPAG-----L-----VFRDKYLEVTSALPAGRASLYGLGERTK	(183)
S. BEET	LFDatPipnptt fL-----iykDqYLqisSsLPaqqAhLYGLGERTK	(215)
SPINACH	LFDatPdpctnpt fL-----iFidqYLhltSsLfgtRAhiYGLGEHsK	(211)
ARABID.	LFDtsPd-----ssdsntyfiFkDqfLqisSALPenRsnLYGiGERTK	(202)
BARLEY	SSFRLRHNDSTFLWNADIGASYVDVNLVYSGHFFYMDVRAP-----GTAH	(227)
S. BEET	ptFqLaHnqilTLWNADIGasfnrDNLVYSGHFFYMDVRsspmv---GstH	(262)
SPINACH	pFqLaHnqilTLmraADIPsSnpDVNLVYSGHFFYMDVRsspsva---GstH	(258)
ARABID.	rSFRLipgetmTLWNADIGasfnrDNLVYSGHFFYMDVRgagkneeaGtH	(252)
BARLEY	GVLLSSNGMDVLYGGSYVYTKVIOGVLDFFYFAGPNPLAVVDQYTQLIA	(277)
S. BEET	GVfLLnSNGMDVeYtGcrtTYKVIGGiDLYiFAGrtPemViDQYTKLIg	(312)
SPINACH	GVLLLSNGMDVeYtGcrtTYKVIGGiDLYiFAGPsPggvVeQfTrvig	(308)
ARABID.	GVLLLSNGMDVkyYcChriTYnVIGGVdLYvFAGPsPemVmnQYTeLIg	(302)
BARLEY	RPAPMPYWSFGFHQCRYGYNVSDLERVARYAKARI PLEVMTDIDYMD	(327)
S. BEET	RPAPMPYWSFGFHQCRYGYNVSDLERVARYAKARI PLEVMTDIDYMD	(362)
SPINACH	RPAPMPYWSFGFHQCRYGYNVSDLERVARYAKARI PLEVMTDIDYMD	(356)
ARABID.	RPAPMPYWSFGFHQCRYGYNVSDLERVARYAKARI PLEVMTDIDYMD	(352)
BARLEY	GFKDFTLDRVNFIAAEZLRFVDRLEHNAQKYVLILDPGIKVDPICATYGT	(377)
S. BEET	aFKDFTLDPVhFpIdkmqgFVtckLHRNgQryVpILDPGI---ntnksYGI	(409)
SPINACH	ayKDFTLDPVNFpIdkmqgFVnnLHKNgQKYVpILDPGI---stnKTYeT	(405)
ARABID.	GyKDFTLDPVNFpIdkmqgFVtckLHKNgQKYVLILDPGI---gvDssYGT	(399)
BARLEY	FVRGMQODIFLKRNGTNFVGNVWPGDVYFPDFMHFAAAEFWAREISLFRR	(427)
S. BEET	FVRGMQsnvFikRNGnpylGsVWPGpVYyFDFldPAAreFwvdeIkrFRd	(459)
SPINACH	yVRGMkhdvFLKRNGkpylGsVWPGpVYyFDFldPAAreFwvdeIkrFln	(455)
ARABID.	ynRGMeadvFikRNGepylGsVWFGkVYFPDFlnPAAATFWsnEIkMFqe	(449)
BARLEY	TIFVDGLWIDMNEISNFYN--PEPMN--ALDDPPYRINNDCTGRPINNKT	(475)
S. BEET	lIPdGiWIDMNEASNFiteaPcPg---LDnPPYkINNsggrvPINsKT	(507)
SPINACH	lIPVDGLWIDMNEISNFis--spPipgstLDnPPYkINNsgvmLPiNKT	(503)
ARABID.	ilPldGLWIDMNEISNFit--splssgeeLEDPPYkINNsgdkRPINNKT	(497)
BARLEY	VRPLAVHYGGVTEYEENLFGLLLEARATGRGVLRDTGRRPFVLSRSTFVG	(523)
S. BEET	ipatAmHYGnvTEYnaHNLyGfLEsqATreslvRpatRqPFLSRSTFaG	(557)
SPINACH	ipFtAmHYGcipeYnvHNLFCyLEArvTraalikiTekRPFVLSRSTFSG	(553)
ARABID.	VpatsihGnisEYdaHNLyGfLEsqATreslvRpatRqPFLSRSTFVs	(547)
BARLEY	SGRYTAYWTGDNAATWCDLRYISINTMLSFGFLGPMGADICGPNNGTTE	(575)
S. BEET	SGkYTAhWTGDNAArWcdLqYSipTMLnFGLGPMGADICGfaesTTE	(607)
SPINACH	SGkYTAhWTGDNAATWcdLqYSipMLDfGLFGIPmvgADICGfLGNTE	(603)
ARABID.	SGkYTAhWTGDNAAKWeDLaySIpgiLnFGLFGIPmvgADICGfshdTTE	(597)
BARLEY	ELCGRWICLGAfYPPSRDHSaIFTVRRELYLWESVAASGRKALGLRYCLL	(623)
S. BEET	ELCGRWICLGAfYPPSRDHSaIFTVRELYLWESVAASaRvLGLRYCLL	(637)
SPINACH	ELCGRWICLGAfYPPSRDHSsIgTtyqELYrWeSVAASaRvLGLRYCLL	(653)
ARABID.	ELCGRWICLGAfYPPSRDHSs-gTarqELYLWESVAASaRvLGLRYCLL	(647)

FIG 2

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BARLEY	PYFYTLMYEAHMTGAPIARPLFFSYPHDVATYGVDRQFLLCRGVLVSPVL	(673)
S. BEET	PYYTYLMydAnlrGcPIARPLcfttPdDVATYGiesQFLIGRGImVSPVL	(707)
SPINACH	PYFYTLMYEAqlngiPIARPLFFSfpdDikTYGiesQFLLGKGVmVSPVL	(703)
ARABID.	PhlyTLMYEAHvsCnPIARPLFFSfpqDckTYeiDsQFLIGksimVSPaL	(697)
BARLEY	EPGPTTVDAYFFPAGRWYRLYDYS LAVATRTGKHVRLPAPADTVNVHLTGG	(723)
S. BEET	qPGssiVnAYsPrGnWvsLenYtesVsvsaGtyVsLsAppDhiNVHiheG	(757)
SPINACH	kPGvveVtAYFPzGnwfdLfDYtrsVtasTGryVtLeAppDhiNVHiqeG	(753)
ARABID.	kqGavaVDAYFFPAGnwfdLfnySEAVggdsGKHVRLdtPADbVNVHvreg	(747)
BARLEY	TILPLOQSALTTSRARRTA FHLLVALAEDGTASGYLFLLDDGDSPEYGR-R	(772)
S. BEET	nIvamQgeAmTfqaARsTpFHLLVvmsdhvastGeLFLDnGiemdiGg-p	(806)
SPINACH	nILamQgkAmTtqaARKTpFHLLVvmsdcGasfGeLFLDDGvertmGvnR	(803)
ARABID.	sIvamQgeALTTrdARKTpyqLLVvasrlenISGeLFLDDGenlrmGa-g	(796)
BARLEY	S---D-WSMVRFNyKIPNNKGAIKVKSEVVHNSYAQSRTLVIKVVLMGH	(816)
S. BEET	g---gkwTlVRPfaesgiN---nlisSEVVnrgYAmSqrwmdKitilGI	(851)
SPINACH	g---k-WtFvKf--iaaeaKqtcitSdVVegefAvsQkwVIGKvtiLG	(847)
ARABID.	ggrrD-WtLVkf--rcyvtgkevvlrSEVVnpeYaskmkwaIgKVtfvGf	(843)
BARLEY	RSPAAPKKLTIVHNSAEVEASSSAGTRYQNAAGGLGGVAH-IGGLSLVUGE	(867)
S. BEET	krrvkiKeyTVqkdagaikvkglgrrtsshngGgffvsv-IedLrqLVGq	(900)
SPINACH	RkgtkingyTVrtgavtrkgdkSkIkstpdrrkGefiVAe-IsGLnLllGr	(896)
ARABID.	envenvKtyeVrtserlrepriSlktvscnddprflsvevskLSLlVGk	(893)
BARLEY	EFELKV---AMSY	(877)
S. BEET	aFkLelefegAtrv	(914)
SPINACH	EFkL-----vlh	(903)
ARABID.	kfEmri----rlt-	(902)

FIG 2

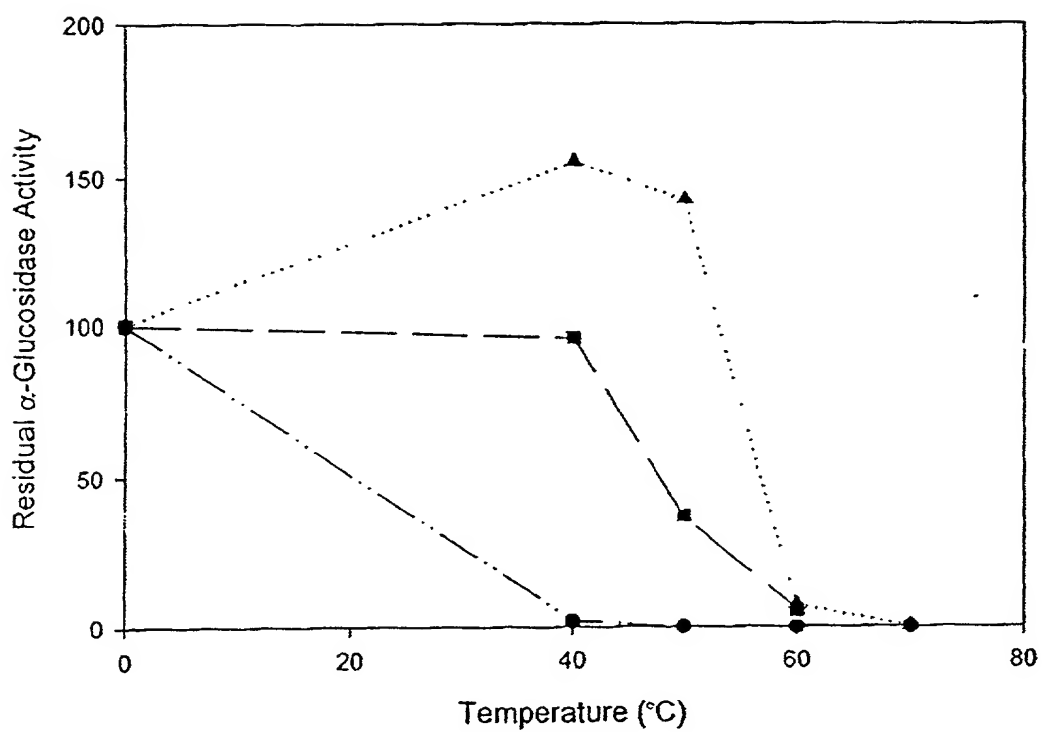


FIG 3

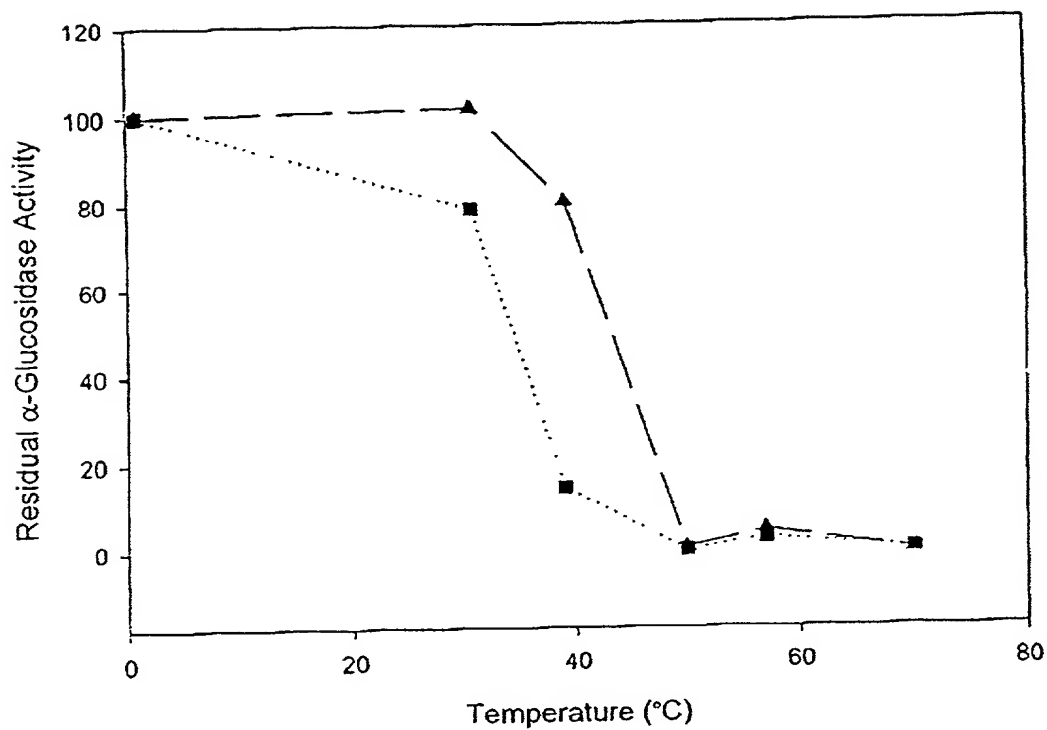


FIG 4

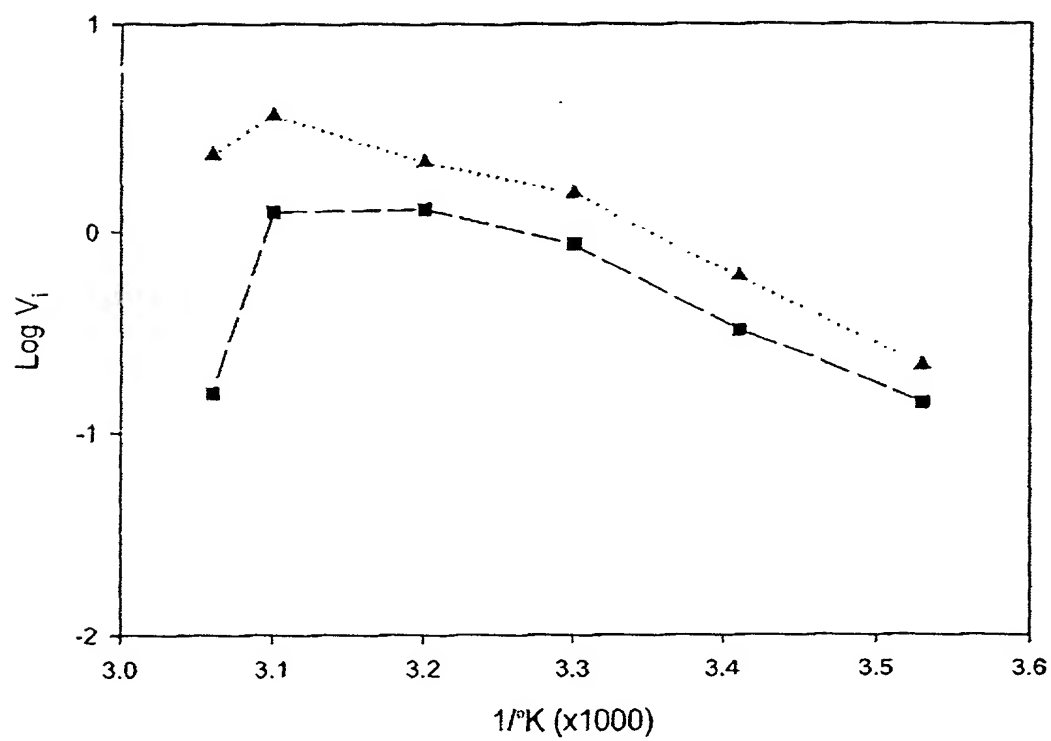


FIG 5